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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,836	08/04/2003	Yoshiyuki Yanagisawa	116771	9243
25944	7590	08/10/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DINH, JACK	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,836

Applicant(s)

YANAGISAWA, YOSHIYUKI

Examiner

Jack Dinh

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,18 and 21 is/are rejected.
- 7) ☐ Claim(s) 2,11-17,19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0803.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: DETAILED ACTION.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 3-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3, line 4, “the holding frame” lacks antecedent basis. Claims 4-8 are rejected based upon the rejected base claim 3.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being unpatentable by Watanabe (US Patent 6,639,743).

(a) Regarding claim 1, Watanabe (figure 7) is interpreted as disclosing an optical device **44** comprising a plurality of optical modulators **441R**, **441G**, **441B** that modulate a plurality of color lights for each color light in accordance with image information, a color combining optical device **45** having a plurality of light-incident sides facing the respective optical modulators, the color combining optical device combining the color lights modulated by the optical modulators, the color combining optical device being integrated with the optical modulators, and an optical converting element **446** provided between the optical modulator and the light-incident side, the optical converting element having a substrate on which an optical conversion film that converts optical characteristics of a light beam irradiated by the optical modulator, wherein the optical modulator is attached to the color combining optical device through a position-adjusting spacer **314** made of a heat-insulative material (col. 10, lines 50-62).

(b) Regarding claim 9, Watanabe is interpreted as further disclosing that the spacer has a contact surface having a predetermined area capable of supporting the optical modulator, the contact surface being bonded to the light-incident surface or a substrate surface of the optical modulator by a light-curing adhesive to attach the spacer to the color combining optical device (col. 12, lines 24-38).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2873

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (US Patent 6,639,743).

Regarding claim 10, Watanabe (figure 6) is interpreted as further disclosing that the optical modulator has an optical modulating element **441G** that conducts optical modulation, and a control cable that transfers a control signal for controlling the optical modulation of the optical modulating element (not shown, but an essential element). Watanabe is interpreted as disclosing all the claimed limitations except that a heat-conductive coating of a heat-conductive material connected with the optical modulating element is provided on the control cable. However, throughout the text and drawings, Watanabe discloses the teaching of many different ways of providing a heat-conductive material on different components for the purpose of transferring excessive heat. Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide a heat-conductive material on the control cable, or perhaps dozens of other components within the structure had this proven to be an effective heat-releasing technique on any particular components regardless of size, for the purpose of migrating the excessive heat.

4. Claims 18 and 21 are rejected under 35 U.S.C. 102(e) as being unpatentable by Watanabe (US Patent 6,639,743), as applied in claim 1, in view of Coble (US Patent 5,483,548).

(a) Regarding claim 18, Watanabe (figure 1 and 3), as described in claim 1 above, is interpreted as further disclosing a projector **1** that modulates a light beam irradiated by a light

Art Unit: 2873

source 413 in accordance with image information to form an optical image comprising the optical unit having the optical device according to claim 1, an optical component casing 91 that accommodates optical components disposed on an optical path from a light source to the optical modulator. Watanabe is interpreted as disclosing all the claimed limitations except that at least part of the optical component casing being made of a heat-conductive material. Within the same field of endeavor, Coble is interpreted as disclosing the teaching of a heat transfer concept wherein heat can be transferred conductively from the inner portions of an apparatus to the outer casing portions (col. 6, lines 53-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time that the invention was made to provide a heat-conductive casing, as taught by Coble, for the purpose of migrating the excessive heat conductively.

(b) Regarding claim 21, Watanabe (figures 1 and 8) is interpreted as further disclosing an exterior case 2 that accommodates the optical unit, wherein a gap is formed between the optical component casing 91 and the exterior case and a cooling fan 341 for sending cooling air to the gap is provided.

***Allowable Subject Matter***

5. Claims 2, 11-17, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter. The present invention relates to an optical device

Art Unit: 2873

integrating an optical modulator for modulating color light in accordance with image information.

(a) Regarding claims 2 and 11, the prior art fails to disclose that the optical modulator is connected through a heat-conductive material to an optical component casing accommodating optical components disposed on an optical path from a light source to the optical modulator, wherein at least a part of the optical component casing being made of a heat-conductive material.

(b) Regarding claim 20, the prior art fails to disclose an optical component casing accommodating optical components disposed on an optical path from a light source to the optical modulator, at least a part of the optical component casing being made of a heat-conductive material, and wherein the heat-conductive coating provided on the control cable of the optical device has a distal end branched from the control cable to be connected with an exterior case accommodating the optical unit.

***Other Information/Remarks***

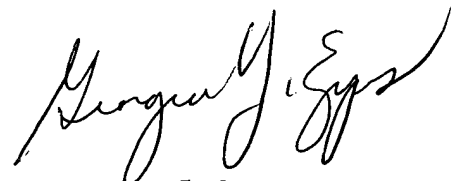
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh



Georgia Epps  
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